



SEP 26 2012

DIVISION OF
OIL AND GAS

RETURN TO: Division of Oil and Gas
550 W 7th Avenue, Suite 800
Anchorage, AK 99501-3560

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS

REVISED LEASE / UNIT* PLAN OF OPERATIONS APPLICATION

Applicant: Great Bear Petroleum Operating LLC Date: 09/14/2012

Contact Person: Karen Bryant Duncan or Pat Galvin Telephone #: (907) 868-8070 Fax #: (907) 868-3887

Mailing Address: 601 W. 5th Ave, Suite 505, Anchorage, AK 99501 E-mail Address: karen@greatbearpetro.com
pat@greatbearpetro.com

Is this activity within a Unit? No Unit name: N/A Operator: _____

Is any part of the proposed project or activity discussed in the approved Unit Plan of Exploration or Development filed with the Division of Oil and Gas? ☐ Yes ☐ No ☒ N/A

If no, attach a detailed explanation.

The Applicant is: ☐ Unit Operator ☒ Lessee* ☒ Tract Operator ☐ Other*: _____

Project Description: Amend Approved Plan of Operations to drill the Alcor #2 well.

Project Location / Facility Name: North Slope, Along the Dalton Highway Corridor

ADL # (mandatory): 391706 Oil and Gas Bond #: B007355

Plan of Operations require a \$250.00 permit fee; payable to the State of Alaska, Department of Revenue; and *should* accompany this application.

1. Plan of Operations: See Attached Plan of Operations Amendment #3.

(Attach extra sheets if necessary, include applicable diagrams and drawings)

2. Surface Property Owner: State of Alaska

3. Legal Description: Section 5, Township 07N, Range 14E, Meridian Umiat

Section _____, Township _____, Range _____, Meridian _____

Decimal Degrees, NAD 83 Latitude 69.98967767490 Longitude -148.68183918100

(Include all necessary maps and use <http://transition.fcc.gov/mb/audio/bickel/DDDMSS-decimal.html>)

4. Site Access: No change from approved Plan of Ops

5. Proposed Start-up Date: 10/15/2012 6. Expected Completion Date: 06/01/2014

7. Project Material: No change 8. Material Source: No change

a) Amount: (pad) _____ cy (road) _____ cy (other) _____ cy

b) Acreage Covered: (pad) _____ (road) _____ (other) _____

9. Snow Removal Plan: Great Bear to work with DMLW on Snow Storage Permit

* Unit Plan of Operations approvals are not considered complete until the consent of the Unit Operator has been obtained by the applicant.

10. Will Any Off-road (tundra or ice) Travel be Required? No change from Approved Plan of Ops

a) Period of Off-road Travel: _____

b) Equipment to be Utilized: _____

11. Will a Temporary Water Use Permit be Required? No change from Approved Plan of Ops

a) Purpose: _____

b) Sources: _____

c) Access: _____ d) Max. Anticipated Withdrawal: _____

12. Will Fuel or Any Other Hazardous Substances be Stored on Site? No change from Approved Plan of Ops

a) Type: _____

b) Volume: _____

c) Handling Technique: _____

d) Access: _____

e) Duration of Storage: _____

13. If a Pipeline is Being Constructed, will the line be a:

☐ Common Carrier Pipeline ☐ Field Gathering Line ☐ Other: _____

a) Location / Route: _____

b) Number, Diameter and Length: _____

c) Type and Use: _____

d) Construction Access: _____

14. Plan for Rehabilitation: ☐ Upon Abandonment ☒ Specific: *see attached plan*

15. Is Any Part of this Application Confidential? No

16. How will Solid Waste be Disposed of? No change from Approved Plan of Ops

17. What Infrastructure will be Used to Support the Project? _____

No change from Approved Plan of Ops

18. Additional Comments: None

The undersigned hereby requests that each page of this application marked confidential be held confidential under AS 38.05.035(a)(8).


Signature Karen Bryant Duncan

VP-Corporate & General Counsel

Title

09/14/2012

Date

Please fill out the form, print it, and sign it.



Great Bear Petroleum Operating LLC

RECEIVED

SEP 24 2012

**DIVISION OF
OIL AND GAS**

REVISED

PLAN OF OPERATIONS Amendment #3

NORTH SLOPE ALASKA

**2011-2013 EXPLORATION
& EVALUATION PROGRAM**

Great Bear Petroleum Operating LLC
601 West 5th Avenue, Suite 505
Anchorage, AK 99501

September 14, 2012 (Updated September 24, 2012)

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1.0 INTRODUCTION

1.1 Exploration and Evaluation Program Summary

Great Bear Petroleum Operating LLC (“Great Bear”) is a private company focusing on the exploration and sustainable development of the first unconventional oil and gas resource play on the North Slope of Alaska. Great Bear’s primary focus is on shale oil. Great Bear currently has 99 state leases covering 499,423 acres located south of the Kuparuk and Prudhoe Bay oil fields, of which it currently owns 100% Working Interest in 98 of such leases. Great Bear owns 75% Working Interest in the 99th lease.

Great Bear is conducting exploration drilling and evaluation activities along the Dalton Highway and Trans Alaska Pipeline System (“TAPS”) corridor under the terms of its Exploration and Evaluation Program (“E&E Program”) Plan of Operations, as approved by the Department of Natural Resources (“DNR”) Division of Oil and Gas (“DOG”) on December 28, 2011. Under the E&E Program, Great Bear expects to drill four vertical wells, with a potential to drill up to six vertical wells, extract core samples, drill side track wells or laterals from certain if not all of the vertical wells, perform production flow tests by stimulating production using hydraulic fracturing and pumping, and truck liquids production to Prudhoe Bay. Drilling of its first E&E Program well, Alcor #1, commenced on June 19, 2012. Drilling of the second E&E Program well, Merak #1, commenced on August 22, 2012.

On August 1, 2012, and updated on September 10, 2012, Great Bear submitted to DOG Amendment #1 to the Plan of Operations to conduct production flow tests on each well for a period up to 180 days. On September 12, 2012, Great Bear submitted Amendment #2 to the Plan of Operations to pipe fresh water from Annie Pit to the Merak drill site.

1.2 Amendment #3 to Plan of Operations

Great Bear proposes to amend the approved Plan of Operations to drill Alcor #2 this coming fall on the currently constructed Alcor drill pad. Alcor #2 is planned as a single borehole to directionally drill directly into the Shublik Formation, or “spud to toe”. Alcor #2 will be spud approximately 10 to 15 feet from Alcor #1. Great Bear will fracture stimulate Alcor #2 and conduct production flow testing for up to 180 days.

2.0 PERMIT REQUIREMENTS

The permits and plans associated with this Amendment #3 are listed in Table 1 below. All required permit applications for activities proposed in this Amendment have been, or will be, submitted to the required agency and properly secured prior to the activities identified in Amendment #3 commencing.

Table 1. Amendment #3 Permits, Plans and Approvals

AGENCY	PERMIT/PLAN	AUTHORIZATION TYPE	DATE(S)		
			To be Submitted	Submitted	Issued
State of Alaska					
AOGCC	Permit To Drill	Authorization to drill the Alcor #2 well	TBD		
DNR - DOG	Plan of Operations Amendment #3	Approval of amendment of plan for land use activities on state O&G leases		9/14/12	
North Slope Borough (NSB)					
Planning & Zoning Department	Land Use Permit Amendment	Administrative Approval of Amendment to Development Permit	TBD		

3.0 AMENDED ACTIVITIES & PROJECT SEQUENCE

3.1 Alcor #2

Great Bear has identified the Shublik Formation as its primary target for testing the capability of producing oil from unconventional resources on Alaska's North Slope. Alcor #1 was the first well to be drilled into the Shublik Formation for shale oil exploration. As such, a lot was learned about the exact locations of the formations and the rock mechanics. Alcor #2 will not require any modification to the drilling pad currently in place, other than the well cellar, and will not create any additional tundra disturbance.

There are three critical reasons for drilling Alcor #2. First, due to circumstances encountered while drilling Alcor #1, the planned 7" casing to total depth ("TD") was set 2,500 feet too high in order to isolate severe lost circulation zones. Alcor #1 was cased to TD with 4.5 inch casing. Great Bear cannot drill out of the 4.5 inch casing into the Shublik Formation. Secondly, attempting to sidetrack from the current 7 inch casing to drill directionally into the higher pressure strata of the deeper target intervals will require higher mud weights through the same severe lost circulation zones that resulted in the 7 inch casing being set shallow. Operationally, there would be a low probability of successfully drilling into the Shublik Formation in this manner. Third, utilizing the knowledge gained on Alcor #1 to drill Alcor #2 from spud to toe should enable Great Bear to get a realistic benchmark of what an expected development well cost might be. Drilling optimization and cost control is essential in establishing the commerciality of the unconventional resource play.

3.2 Change to Project Tasks and Timeline due to Amendment #3

Approval of Amendments #1 and #3 will result in a modification of the project schedule to allow Great Bear to conduct two extended production flow tests of the Shublik Formation through the end of this year and continuing into the first part of 2013. The table below shows the project task

sequence that will result with Amendment #3. The combination of Amendments #1 and #3 has the potential to accelerate Great Bear's evaluation of the development potential of the North Slope unconventional resource play by at least one year.

Table 2. Project Tasks With Amendment #3

Task #	With Amendment #3
1	Drill Merak #1 (including lateral into the Shublik Formation) – Completed approximately mid-October
2	Fracture Stimulate and Flow Test Merak #1 – Mid-October until finished (pending approval of Amendment #1)
3	Move Rig to Alcor and drill Alcor #2 (including lateral into the Shublik Formation) – Completed approximately early December
4	Fracture Stimulate and Flow Test Alcor #2 – December until finished (approximately July 2013)

3.3 Impacts Associated with Amendment #3

Great Bear believes that Amendment #3 will have no significant impacts beyond the approved Plan of Operations. Alcor #2 will be drilled from the same drill pad as Alcor #1 and will result in no additional surface disturbance other than the well cellar itself. As with all the E&E Program wells, the Alcor #2 well cellar will be designed to accommodate the use of a below surface-level valve assembly following suspension of the Alcor #2 well. On the other hand, Amendment #3 will be of great value to the State and Great Bear in accelerating the evaluation of the development potential of the North Slope's unconventional resource play.

4.0 LOCATION AND SITE DEVELOPMENT

Drill pad locations remain the same as found in the approved Plan of Operations.

5.0 GENERAL OPERATIONS

No changes in the approved operations are proposed other than those discussed above.

6.0 CONTACT INFORMATION & EQUIPMENT LIST

6.1 Contact Information

The following persons may be contacted for details on this amendment:

Pat Galvin

1-907-868-8070 (office phone) or

pat@greatbearpetro.com (email)

or

Karen Duncan

1-907-868-8070 (office phone) or

karen@greatbearpetro.com (email)

6.2 Equipment List

Great Bear takes this opportunity to clarify the equipment that may be used in operations in the E&E Program, and supplement the Equipment List from the original POO, as previously supplemented in Amendments #1 and #2 (collectively, “supplemented POO”). The following clarifications and additional supplements to the Equipment List correspond to currently anticipated equipment requirements and provide some flexibility to react to minor adjustments in operational needs. Great Bear has attempted to be reasonably specific in listing the equipment that may be on-site; however, there may be miscellaneous support equipment that is not specifically listed.

All of the equipment contained in the E&E Program Equipment List from the supplemented POO, including the clarifications and supplements below, will use the existing gravel access roads to reach the drill pads. Also, other than the grader and loader used for site preparation, all equipment will be operating from the existing gravel access roads or the drill pads described in the supplemented POO. No additional off-road access or tundra travel is required for their use.

This list may be supplemented from time to time as additional equipment needs are identified which were not contemplated at this time. In such cases, notice will be provided to DOG regarding any additional equipment that may be needed to complete the E&E Program. Unless stated in a future amendment to the approved POO, such additional equipment will not require additional access routes or tundra travel for their use.

Clarifications

- Pickup trucks carrying workers or visitors or delivering supplies may be on location
- Flatbed trucks may be used to deliver supplies to the drill sites
- Tech Command Center(s) may be on site during hydraulic fracturing
- Frac tanks will be on location during fracing operations
- Flowback equipment will include a choke manifold, sand separator, line heater, liquids/gas separator, miscellaneous pumps and tanks, and a flare stack
- Large pressure pumps other than the Grizzly Pumps may be used

Supplemental Equipment List

- Electric Generators
- Slick Line Unit
- Man Lift
- Portable Lab
- Water Heater Units
- Sand and Water Blender Trucks
- Chemical Transport Trucks
- Parts Trailer
- Light Plants
- Air compressors